



FEB 05 2014

Mr. Ray Arthur
Fresno/Clovis Regional Wastewater Treatment Plant
5607 W. Jensen Avenue
Fresno, CA 93706

**Re: Notice of Minor Title V Permit Modification
District Facility # C-535
Project # 1140130**

Dear Mr. Arthur:

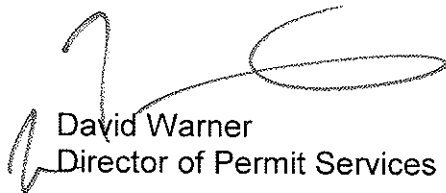
Enclosed is the District's analysis of your application for minor Title V permit modification for the facility identified above. You proposed a Title V minor permit modification to incorporate recently issued Authorities to Construct (ATC's) C-535-18-12 and '-19-12 into the Title V operating permit. These ATC's authorized the modifications of two 3.377 MW gas turbines by replacing the existing NO_x, CO and O₂ continuous emissions monitoring system (CEMS) with a predictive emissions monitoring system (PEMS).

Enclosed is the engineering evaluation with the following attachments: proposed modified Title V permits, recently issued Authorities to Construct (ATC's) C-535-18-12 and '-19-12, application, and previous Title V permits. This project will be subject to a 45-day EPA commenting period prior to the District taking final action.

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,


David Warner
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

TITLE V APPLICATION REVIEW

Minor Modification
Project #: 1140130

Engineer: Dustin Brown
Date: February 6, 2014

Facility Number: C-535
Facility Name: Fresno/Clovis Regional Wastewater Treatment Plant
Mailing Address: 5607 W. Jensen Avenue
Fresno, CA 93706

Contact Name: Ray Arthur
Phone: (559) 621-5266

Responsible Official: Ray Arthur
Title: Project Manager – Air Resources

I. PROPOSAL

Fresno/Clovis Regional WWTP is proposing a Title V minor permit modification to incorporate recently issued Authorities to Construct (ATC's) C-535-18-12 and '-19-12 into their Title V operating permit. Both ATC's authorized modifications to the two 3.377 MW digester gas/natural gas fired turbines to replace the existing NO_x, CO and O₂ continuous emission monitoring system (CEMS) with a NO_x, CO, and O₂ predictive emissions monitoring system (PEMS).

The purpose of this evaluation is to identify all applicable requirements, determine if the facility will comply with the applicable requirements and to provide the legal and factual basis for the proposed revisions.

II. FACILITY LOCATION

Fresno/Clovis Regional WWTP is located at 5607 W. Jensen Avenue in Fresno, CA.

III. EQUIPMENT DESCRIPTION

Current Permit Equipment Descriptions:

C-535-18-11: 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #1 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-19

C-535-19-11: 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #2 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-18

ATC Equipment Descriptions:

C-535-18-12: MODIFICATION OF 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #1 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-19: REPLACE EXISTING NOX, CO AND O2 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) WITH A NEW ROCKWELL AUTOMATION PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

C-535-19-12: MODIFICATION OF 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #2 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-18: REPLACE EXISTING NOX, CO AND O2 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) WITH A NEW PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

Post Project Equipment Descriptions:

C-535-18-14: 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #1 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, A 2.25 MW STEAM TURBINE SHARED WITH C-535-19, AND A PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

C-535-19-14: 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #2 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, A 2.25 MW STEAM TURBINE SHARED WITH C-535-18, AND A PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

IV. SCOPE OF EPA AND PUBLIC REVIEW

This change to a Title V permit is considered to be a minor modification and, as such, requires no public review.

V. APPLICABLE REQUIREMENTS

District Rule 2520, Federally Mandated Operating Permits (Adopted June 21, 2001)

VI. DESCRIPTION OF PROPOSED MODIFICATIONS

Fresno/Clovis Regional WWTP is proposing modifications of two 3.377 MW digester gas/natural gas fired turbines by replacing the NO_x, CO and O₂ continuous emissions monitoring system (CEMS) serving each unit with a Rockwell Automation predictive emission monitoring system (PEMS). No other changes to the existing equipment are being proposed as a part of this project.

The proposed changes of the monitoring systems on each of these turbines will not result in any emission increases for any pollutant.

Both existing permits, ATC's and proposed permits for units C-535-18 and '-19 are identical. Therefore, the condition changes described below will apply to both of these permit units.

Existing PTO Changes:

Existing PTO condition 7 was revised in accordance with the replacement of the existing CEMS with a PEMS. The revised requirement has been included as condition 26 of this revised permit.

Existing PTO conditions 8 and 9 have been revised to specify that the data gathered by the new PEMS shall be connected to the District's polling software and that the data shall be provided daily. The revised requirements have been included as conditions 33 and 34 of this revised permit.

Existing PTO condition 23 was revised in accordance with the replacement of the existing CEMS with a PEMS. The revised requirement has been included as condition 37 of this revised permit.

Existing PTO condition 33 was revised in accordance with the replacement of the existing CEMS with a PEMS and to clarify that the records required by this condition are also used to assure compliance with District Rule 4703. The revised requirement has been included as condition 41 of this revised permit.

Existing PTO condition 37 was revised in accordance with the replacement of the existing CEMS with a PEMS and specifies the quarterly audit requirements for the new monitoring system. The revised requirement has been split in to two conditions and included as conditions 30 and 31 of this revised permit.

Existing PTO condition 38 was revised in accordance with the replacement of the existing CEMS with a PEMS and specifies the relative accuracy test audit (RATA) requirements for the new monitoring system. The revised requirement has been included as condition 29 of this revised permit.

New PTO Conditions:

Condition 28 and 29 of the requirements for this revised permit were added to assure ongoing compliance with the PEMS requirements set forth within 40 CFR 60, Appendix B, Performance Specification 16, Specifications and Test Procedures for Predictive Emissions Monitoring Systems in Stationary Sources.

ATC Condition Changes:

ATC condition 1 has been removed and not included in the requirements for these revised permits as Darling International has submitted the appropriate Title V applications to incorporate these ATC's in to their Title V operating permit.

ATC condition 30 specified requirements for the initial RATA be performed within 60 days of initial startup of the new PEMS. Fresno/Clovis Regional WWTP performed their initial RATA on the new PEMS in December of 2013. Therefore, the language of this condition has been revised to remove the initial RATA requirements. Fresno/Clovis Regional WWTP will only be required to perform a RATA on the PEMS at least once every four calendar quarters moving forward. The revised requirement has been included as condition 29 of this revised permit.

VII. COMPLIANCE

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include;
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including;

1. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
2. The source's suggested draft permit; and
3. Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used.

VIII. ATTACHMENTS

- A. Proposed Modified Title V Operating Permits C-535-18-14 and '-19-14
- B. Authorities to Construct C-535-18-12 and '-19-12
- C. Application
- D. Previous Title V Operating Permits C-535-18-11 and '-19-11

ATTACHMENT A

Proposed Modified Title V Operating Permits
C-535-18-14 and '-19-14

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-535-18-14

EXPIRATION DATE: 01/31/2016

EQUIPMENT DESCRIPTION:

3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #1 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, A 2.25 MW STEAM TURBINE SHARED WITH C-535-19, AND A PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. The gas-fired turbines shall be fired on natural gas or digester gas or any combination (blend) of natural gas and digester gas. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The total sulfur content of the natural gas combusted by this unit shall not exceed 1.0 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The H₂S content of the digester gas combusted by this unit shall not exceed 200 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The owner or operator shall install, operate and maintain in calibration a system which continuously measures and records: the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
7. During periods of start-up or shutdown, turbine exhaust emission rates shall not exceed any of the following limits: NO_x (as NO₂) - 5.74 lb/hr, SO_x - 2.07 lb/hr, PM₁₀ 1.34 lb/hr, CO - 27.95 lb/hr, or VOC - 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Emission rates from this unit, except during start-up and shutdown, shall not exceed any of the following limits: NO_x (as NO₂) - 0.95 lb/hr and 5 ppmvd @ 15% O₂; SO_x (as SO₂) - 2.07 lb/hr; PM₁₀ - 1.34 lb/hr; CO - 27.95 lb/hr and 188.0 ppmvd @ 15% O₂; or VOC (as methane) - 0.02 lb/hr. [District Rules 2201 and 4703, 40 CFR 60.332(a)(2) and 40 CFR 60.333(a) & (b)] Federally Enforceable Through Title V Permit
9. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 51.5 lb/day; SO_x (as SO₂) - 49.7 lb/day; PM₁₀ - 32.2 lb/day; CO - 670.8 lb/day; or VOC - 0.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 9,299 lb/year; SO_x (as SO₂) - 18,141 lb/year; PM₁₀ - 11,753 lb/year; CO - 244,842 lb/year; or VOC - 183 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Ammonia (NH₃) emissions shall not exceed either of the following limits: 1.37 lb/hr or 10 ppmvd @ 15% O₂ (based on a 24 hour rolling average). [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1.) calculate the daily ammonia emissions using the following equation: $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$, where a = average ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O₂ across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O₂. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation; 4.) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the permittee shall monitor and record the stack concentration weekly using a portable emissions monitor that meets District specifications. If compliance with the ammonia emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The duration of each startup or shutdown event shall not exceed two hours. Start-up and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
14. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703] Federally Enforceable Through Title V Permit
15. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit
16. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB policy document titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
17. Source testing to measure the NOx, CO, and NH₃ emission rates (lb/hr and ppmvd @ 15% O₂) shall be conducted at least once every twelve months. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NOx - EPA Method 7E or 20 or ARB Method 100, CO - EPA Method 10 or 10B or ARB Method 100, O₂ - EPA Method 3, 3A, or 20 or ARB Method 100, and ammonia - BAAQMD Method ST-1B. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit
20. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
22. When the unit is fired solely on PUC-regulated natural gas, maintain on file copies of the natural gas bills. [District Rule 2520 and 40 CFR 60.334(h)(3)] Federally Enforceable Through Title V Permit
23. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel shall be tested weekly except that if compliance with the fuel sulfur content limit in this permit has been demonstrated for 8 consecutive weeks, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content limit in this permit, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520 and 40 CFR 60.334(i)(3)] Federally Enforceable Through Title V Permit
24. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel being fired in the turbine shall be determined using ASTM method D-1072, D-4084, D-3246 or D-4810. [District Rule 1081 and 40 CFR 60.335(b)(10)] Federally Enforceable Through Title V Permit
25. When the unit is not fired solely on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the turbine exceeds 0.8% by weight. [40 CFR 60.334(j)] Federally Enforceable Through Title V Permit
26. The owner or operator shall install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously monitors and records the exhaust gas NO_x, CO and O₂ concentrations. Predictive emissions monitor(s) shall be capable of monitoring emissions during normal operating conditions, and during startups and shutdowns provided the PEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of PEMS cannot be demonstrated during startup conditions, PEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this permit. [District Rules 1080, 2201, and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
27. Operation and calibration of the PEMS equipment shall be performed in accordance with the requirements of 40 CFR, Part 60, Appendix B, Performance Specification 16. [District Rule 1080] Federally Enforceable Through Title V Permit
28. The PEMS sensor evaluation system shall check the integrity of each input at least once per day. [District Rule 1080] Federally Enforceable Through Title V Permit
29. The owner/operator shall perform a relative accuracy test audit (RATA) for the NO_x, CO and O₂ PEMS at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the predictive emission monitoring equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix B, Performance Specification 16. [District Rule 1080] Federally Enforceable Through Title V Permit
30. The owner/operator shall perform a relative accuracy audit (RAA) of the PEMS at least once each calendar quarter, except during quarters in which a RATA is performed, in accordance with EPA guidelines. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
31. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly RATA in the second year, the permittee may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs as specified in Section 9.3 of EPA Performance Specification 16. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, the operator must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA. [District Rule 1080] Federally Enforceable Through Title V Permit
32. Results of continuous emissions monitoring equipment shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

33. The facility shall maintain equipment, facilities, and systems compatible with the District's continuous emission monitor data polling software system and shall make PEMS data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
34. Upon notice by the District that the facility's PEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the PEMS data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
35. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080] Federally Enforceable Through Title V Permit
36. The owner or operator shall submit a written report of PEMS operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and the cause of excess (if known), corrective actions taken and preventative measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period and used to determine compliance with an emissions standard; Applicable time and date of each period during which the PEMS was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit
37. When the turbine is operating and it is determined that the predictive emission monitoring system (PEMS) for NO_x and CO is not operating properly, the permittee shall notify the District of the breakdown condition in accordance with Rule 1100 (Equipment Breakdown). During the breakdown period, the facility shall demonstrate emissions compliance by monitoring and recording hourly NO_x and CO concentrations utilizing a portable analyzer that meets District specifications. The facility shall operate the portable analyzer providing data to the District for a maximum of 96 hours per breakdown occurrence. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
38. Portable analyzer readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
39. If the NO_x and/or CO concentrations, as measured by the permittee with a portable analyzer, exceed the permitted emission limits, the permittee shall notify the District and return the NO_x and CO concentrations to the permitted emission limits as soon as possible but no longer than eight (8) hours after detection. If the permittee's portable analyzer readings continue to exceed the permitted emissions limits after eight (8) hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
40. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
41. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any PEM system that has been installed pursuant to District Rule 1080, and emission measurements. [District Rules 1080 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

42. Records shall be maintained on the quality and accuracy of all instruments to verify compliance. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
43. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

DRAFT

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-535-19-14

EXPIRATION DATE: 01/31/2016

EQUIPMENT DESCRIPTION:

3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #2 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, A 2.25 MW STEAM TURBINE SHARED WITH C-535-18, AND A PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. The gas-fired turbines shall be fired on natural gas or digester gas or any combination (blend) of natural gas and digester gas. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The total sulfur content of the natural gas combusted by this unit shall not exceed 1.0 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The H₂S content of the digester gas combusted by this unit shall not exceed 200 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The owner or operator shall install, operate and maintain in calibration a system which continuously measures and records: the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
7. During periods of start-up or shutdown, turbine exhaust emission rates shall not exceed any of the following limits: NO_x (as NO₂) - 5.74 lb/hr, SO_x - 2.07 lb/hr, PM₁₀ 1.34 lb/hr, CO - 27.95 lb/hr, or VOC - 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Emission rates from this unit, except during start-up and shutdown, shall not exceed any of the following limits: NO_x (as NO₂) - 0.95 lb/hr and 5 ppmvd @ 15% O₂; SO_x (as SO₂) - 2.07 lb/hr; PM₁₀ - 1.34 lb/hr; CO - 27.95 lb/hr and 188.0 ppmvd @ 15% O₂; or VOC (as methane) - 0.02 lb/hr. [District Rules 2201 and 4703, 40 CFR 60.332(a)(2) and 40 CFR 60.333(a) & (b)] Federally Enforceable Through Title V Permit
9. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 51.5 lb/day; SO_x (as SO₂) - 49.7 lb/day; PM₁₀ - 32.2 lb/day; CO - 670.8 lb/day; or VOC - 0.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 9,299 lb/year; SO_x (as SO₂) - 18,141 lb/year; PM₁₀ - 11,753 lb/year; CO - 244,842 lb/year; or VOC - 183 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Ammonia (NH₃) emissions shall not exceed either of the following limits: 1.37 lb/hr or 10 ppmvd @ 15% O₂ (based on a 24 hour rolling average). [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

12. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1.) calculate the daily ammonia emissions using the following equation: $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$, where a = average ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O2. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation; 4.) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the permittee shall monitor and record the stack concentration weekly using a portable emissions monitor that meets District specifications. If compliance with the ammonia emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The duration of each startup or shutdown event shall not exceed two hours. Start-up and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
14. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703] Federally Enforceable Through Title V Permit
15. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit
16. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB policy document titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
17. Source testing to measure the NOx, CO, and NH3 emission rates (lb/hr and ppmvd @ 15% O2) shall be conducted at least once every twelve months. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
19. The following test methods shall be used: NOx - EPA Method 7E or 20 or ARB Method 100, CO - EPA Method 10 or 10B or ARB Method 100, O2 - EPA Method 3, 3A, or 20 or ARB Method 100, and ammonia - BAAQMD Method ST-1B. NOx test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit
20. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
22. When the unit is fired solely on PUC-regulated natural gas, maintain on file copies of the natural gas bills. [District Rule 2520 and 40 CFR 60.334(h)(3)] Federally Enforceable Through Title V Permit
23. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel shall be tested weekly except that if compliance with the fuel sulfur content limit in this permit has been demonstrated for 8 consecutive weeks, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content limit in this permit, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520 and 40 CFR 60.334(i)(3)] Federally Enforceable Through Title V Permit
24. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel being fired in the turbine shall be determined using ASTM method D-1072, D-4084, D-3246 or D-4810. [District Rule 1081 and 40 CFR 60.335(b)(10)] Federally Enforceable Through Title V Permit
25. When the unit is not fired solely on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the turbine exceeds 0.8% by weight. [40 CFR 60.334(j)] Federally Enforceable Through Title V Permit
26. The owner or operator shall install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously monitors and records the exhaust gas NO_x, CO and O₂ concentrations. Predictive emissions monitor(s) shall be capable of monitoring emissions during normal operating conditions, and during startups and shutdowns provided the PEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of PEMS cannot be demonstrated during startup conditions, PEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this permit. [District Rules 1080, 2201, and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
27. Operation and calibration of the PEMS equipment shall be performed in accordance with the requirements of 40 CFR, Part 60, Appendix B, Performance Specification 16. [District Rule 1080] Federally Enforceable Through Title V Permit
28. The PEMS sensor evaluation system shall check the integrity of each input at least once per day. [District Rule 1080] Federally Enforceable Through Title V Permit
29. The owner/operator shall perform a relative accuracy test audit (RATA) for the NO_x, CO and O₂ PEMS at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the predictive emission monitoring equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix B, Performance Specification 16. [District Rule 1080] Federally Enforceable Through Title V Permit
30. The owner/operator shall perform a relative accuracy audit (RAA) of the PEMS at least once each calendar quarter, except during quarters in which a RATA is performed, in accordance with EPA guidelines. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
31. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly RATA in the second year, the permittee may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs as specified in Section 9.3 of EPA Performance Specification 16. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, the operator must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA. [District Rule 1080] Federally Enforceable Through Title V Permit
32. Results of continuous emissions monitoring equipment shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

33. The facility shall maintain equipment, facilities, and systems compatible with the District's continuous emission monitor data polling software system and shall make PEMS data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
34. Upon notice by the District that the facility's PEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the PEMS data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
35. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080] Federally Enforceable Through Title V Permit
36. The owner or operator shall submit a written report of PEMS operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and the cause of excess (if known), corrective actions taken and preventative measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period and used to determine compliance with an emissions standard; Applicable time and date of each period during which the PEMS was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit
37. When the turbine is operating and it is determined that the predictive emission monitoring system (PEMS) for NO_x and CO is not operating properly, the permittee shall notify the District of the breakdown condition in accordance with Rule 1100 (Equipment Breakdown). During the breakdown period, the facility shall demonstrate emissions compliance by monitoring and recording hourly NO_x and CO concentrations utilizing a portable analyzer that meets District specifications. The facility shall operate the portable analyzer providing data to the District for a maximum of 96 hours per breakdown occurrence. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
38. Portable analyzer readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
39. If the NO_x and/or CO concentrations, as measured by the permittee with a portable analyzer, exceed the permitted emission limits, the permittee shall notify the District and return the NO_x and CO concentrations to the permitted emission limits as soon as possible but no longer than eight (8) hours after detection. If the permittee's portable analyzer readings continue to exceed the permitted emissions limits after eight (8) hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
40. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
41. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any PEM system that has been installed pursuant to District Rule 1080, and emission measurements. [District Rules 1080 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

42. Records shall be maintained on the quality and accuracy of all instruments to verify compliance. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
43. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

DRAFT

ATTACHMENT B

Authorities to Construct C-535-18-12 and '-19-12



AUTHORITY TO CONSTRUCT

PERMIT NO: C-535-18-12

ISSUANCE DATE: 05/08/2013

LEGAL OWNER OR OPERATOR: FRESNO/CLOVIS REGIONAL WWTP

MAILING ADDRESS: 5607 W JENSEN AVE
FRESNO, CA 93706-9458

LOCATION: 5607 W JENSEN AVE
FRESNO, CA 93706

EQUIPMENT DESCRIPTION:

MODIFICATION OF 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #1 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-19: REPLACE EXISTING NOX, CO AND O2 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) WITH A NEW ROCKWELL AUTOMATION PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. The gas-fired turbines shall be fired on natural gas or digester gas or any combination (blend) of natural gas and digester gas. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The total sulfur content of the natural gas combusted by this unit shall not exceed 1.0 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The H2S content of the digester gas combusted by this unit shall not exceed 200 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO



DAVID WARNER, Director of Permit Services

C-535-18-12: Feb 3 2014 8:34AM - BROWN : Joint Inspection NOT Required

7. The owner or operator shall install, operate and maintain in calibration a system which continuously measures and records: the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
8. During periods of start-up or shutdown, turbine exhaust emission rates shall not exceed any of the following limits: NO_x (as NO₂) - 5.74 lb/hr, SO_x - 2.07 lb/hr, PM₁₀ 1.34 lb/hr, CO - 27.95 lb/hr, or VOC - 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Emission rates from this unit, except during start-up and shutdown, shall not exceed any of the following limits: NO_x (as NO₂) - 0.95 lb/hr and 5 ppmvd @ 15% O₂; SO_x (as SO₂) - 2.07 lb/hr; PM₁₀ - 1.34 lb/hr; CO - 27.95 lb/hr and 188.0 ppmvd @ 15% O₂; or VOC (as methane) - 0.02 lb/hr. [District Rules 2201 and 4703, 40 CFR 60.332(a)(2) and 40 CFR 60.333(a) & (b)] Federally Enforceable Through Title V Permit
10. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 51.5 lb/day; SO_x (as SO₂) - 49.7 lb/day; PM₁₀ - 32.2 lb/day; CO - 670.8 lb/day; or VOC - 0.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 9,299 lb/year; SO_x (as SO₂) - 18,141 lb/year; PM₁₀ - 11,753 lb/year; CO - 244,842 lb/year; or VOC - 183 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Ammonia (NH₃) emissions shall not exceed either of the following limits: 1.37 lb/hr or 10 ppmvd @ 15% O₂ (based on a 24 hour rolling average). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1.) calculate the daily ammonia emissions using the following equation: $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$, where a = average ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO_x concentration ppmvd @ 15% O₂ across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O₂. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation; 4.) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the permittee shall monitor and record the stack concentration weekly using a portable emissions monitor that meets District specifications. If compliance with the ammonia emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The duration of each startup or shutdown event shall not exceed two hours. Start-up and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
15. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703] Federally Enforceable Through Title V Permit
16. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

17. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO_x, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB policy document titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
18. Source testing to measure the NO_x, CO, and NH₃ emission rates (lb/hr and ppmvd @ 15% O₂) shall be conducted at least once every twelve months. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
19. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
20. The following test methods shall be used: NO_x - EPA Method 7E or 20 or ARB Method 100, CO - EPA Method 10 or 10B or ARB Method 100, O₂ - EPA Method 3, 3A, or 20 or ARB Method 100, and ammonia - BAAQMD Method ST-1B. NO_x test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit
21. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. When the unit is fired solely on PUC-regulated natural gas, maintain on file copies of the natural gas bills. [District Rule 2520 and 40 CFR 60.334(h)(3)] Federally Enforceable Through Title V Permit
24. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel shall be tested weekly except that if compliance with the fuel sulfur content limit in this permit has been demonstrated for 8 consecutive weeks, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content limit in this permit, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520 and 40 CFR 60.334(i)(3)] Federally Enforceable Through Title V Permit
25. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel being fired in the turbine shall be determined using ASTM method D-1072, D-4084, D-3246 or D-4810. [District Rule 1081 and 40 CFR 60.335(b)(10)] Federally Enforceable Through Title V Permit
26. When the unit is not fired solely on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the turbine exceeds 0.8% by weight. [40 CFR 60.334(j)] Federally Enforceable Through Title V Permit
27. The owner or operator shall install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously monitors and records the exhaust gas NO_x, CO and O₂ concentrations. Predictive emissions monitor(s) shall be capable of monitoring emissions during normal operating conditions, and during startups and shutdowns provided the PEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of PEMS cannot be demonstrated during startup conditions, PEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this permit. [District Rules 1080, 2201, and 4703 and 40 CFR 60.334(b)]
28. Operation and calibration of the PEMS equipment shall be performed in accordance with the requirements of 40 CFR, Part 60, Appendix B, Performance Specification 16. [District Rule 1080]
29. The PEMS sensor evaluation system shall check the integrity of each input at least once per day. [District Rule 1080]

CONDITIONS CONTINUE ON NEXT PAGE

30. The owner/operator shall perform a relative accuracy test audit (RATA) for the NO_x, CO and O₂ PEMS within 60 days of initial startup and at least once every four calendar quarters thereafter. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the predictive emission monitoring equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix B, Performance Specification 16. [District Rule 1080]
31. The owner/operator shall perform a relative accuracy audit (RAA) of the PEMS at least once each calendar quarter, except during quarters in which a RATA is performed, in accordance with EPA guidelines. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]
32. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly RATA in the second year, the permittee may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs as specified in Section 9.3 of EPA Performance Specification 16. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, the operator must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA. [District Rule 1080]
33. Results of continuous emissions monitoring equipment shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]
34. The facility shall maintain equipment, facilities, and systems compatible with the District's continuous emission monitor data polling software system and shall make PEMS data available to the District's automated polling system on a daily basis. [District Rule 1080]
35. Upon notice by the District that the facility's PEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the PEMS data is sent to the District by a District-approved alternative method. [District Rule 1080]
36. The owner or operator shall submit a written report of PEMS operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and the cause of excess (if known), corrective actions taken and preventative measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period and used to determine compliance with an emissions standard; Applicable time and date of each period during which the PEMS was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080]
37. When the turbine is operating and it is determined that the predictive emission monitoring system (PEMS) for NO_x and CO is not operating properly, the permittee shall notify the District of the breakdown condition in accordance with Rule 1100 (Equipment Breakdown). During the breakdown period, the facility shall demonstrate emissions compliance by monitoring and recording hourly NO_x and CO concentrations utilizing a portable analyzer that meets District specifications. The facility shall operate the portable analyzer providing data to the District for a maximum of 96 hours per breakdown occurrence. [District Rules 2201 and 4703]
38. Portable analyzer readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. If the NO_x and/or CO concentrations, as measured by the permittee with a portable analyzer, exceed the permitted emission limits, the permittee shall notify the District and return the NO_x and CO concentrations to the permitted emission limits as soon as possible but no longer than eight (8) hours after detection. If the permittee's portable analyzer readings continue to exceed the permitted emissions limits after eight (8) hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
40. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
41. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any PEM system that has been installed pursuant to District Rule 1080, and emission measurements. [District Rules 1080 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit
42. Records shall be maintained on the quality and accuracy of all instruments to verify compliance. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
43. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: C-535-19-12

ISSUANCE DATE: 05/08/2013

LEGAL OWNER OR OPERATOR: FRESNO/CLOVIS REGIONAL WWTP

MAILING ADDRESS: 5607 W JENSEN AVE
FRESNO, CA 93706-9458

LOCATION: 5607 W JENSEN AVE
FRESNO, CA 93706

EQUIPMENT DESCRIPTION:

MODIFICATION OF 3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #2 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-18: REPLACE EXISTING NOX, CO AND O2 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) WITH A NEW PREDICTIVE EMISSION MONITORING SYSTEM (PEMS)

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. The gas-fired turbines shall be fired on natural gas or digester gas or any combination (blend) of natural gas and digester gas. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The total sulfur content of the natural gas combusted by this unit shall not exceed 1.0 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The H2S content of the digester gas combusted by this unit shall not exceed 200 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO



DAVID WARNER, Director of Permit Services

C-535-19-12; Feb 3 2014 8:34AM - BROWND : Joint Inspection NOT Required

7. The owner or operator shall install, operate and maintain in calibration a system which continuously measures and records: the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
8. During periods of start-up or shutdown, turbine exhaust emission rates shall not exceed any of the following limits: NO_x (as NO₂) - 5.74 lb/hr, SO_x - 2.07 lb/hr, PM₁₀ 1.34 lb/hr, CO - 27.95 lb/hr, or VOC - 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Emission rates from this unit, except during start-up and shutdown, shall not exceed any of the following limits: NO_x (as NO₂) - 0.95 lb/hr and 5 ppmvd @ 15% O₂; SO_x (as SO₂) - 2.07 lb/hr; PM₁₀ - 1.34 lb/hr; CO - 27.95 lb/hr and 188.0 ppmvd @ 15% O₂; or VOC (as methane) - 0.02 lb/hr. [District Rules 2201 and 4703, 40 CFR 60.332(a)(2) and 40 CFR 60.333(a) & (b)] Federally Enforceable Through Title V Permit
10. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 51.5 lb/day; SO_x (as SO₂) - 49.7 lb/day; PM₁₀ - 32.2 lb/day; CO - 670.8 lb/day; or VOC - 0.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NO_x (as NO₂) - 9,299 lb/year; SO_x (as SO₂) - 18,141 lb/year; PM₁₀ - 11,753 lb/year; CO - 244,842 lb/year; or VOC - 183 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Ammonia (NH₃) emissions shall not exceed either of the following limits: 1.37 lb/hr or 10 ppmvd @ 15% O₂ (based on a 24 hour rolling average). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1.) calculate the daily ammonia emissions using the following equation: $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$, where a = average ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NO_x concentration ppmvd @ 15% O₂ across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O₂. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation; 4.) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the permittee shall monitor and record the stack concentration weekly using a portable emissions monitor that meets District specifications. If compliance with the ammonia emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The duration of each startup or shutdown event shall not exceed two hours. Start-up and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
15. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703] Federally Enforceable Through Title V Permit
16. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

17. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO_x, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB policy document titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit
18. Source testing to measure the NO_x, CO, and NH₃ emission rates (lb/hr and ppmvd @ 15% O₂) shall be conducted at least once every twelve months. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
19. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
20. The following test methods shall be used: NO_x - EPA Method 7E or 20 or ARB Method 100, CO - EPA Method 10 or 10B or ARB Method 100, O₂ - EPA Method 3, 3A, or 20 or ARB Method 100, and ammonia - BAAQMD Method ST-1B. NO_x test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit
21. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. When the unit is fired solely on PUC-regulated natural gas, maintain on file copies of the natural gas bills. [District Rule 2520 and 40 CFR 60.334(h)(3)] Federally Enforceable Through Title V Permit
24. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel shall be tested weekly except that if compliance with the fuel sulfur content limit in this permit has been demonstrated for 8 consecutive weeks, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content limit in this permit, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520 and 40 CFR 60.334(i)(3)] Federally Enforceable Through Title V Permit
25. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel being fired in the turbine shall be determined using ASTM method D-1072, D-4084, D-3246 or D-4810. [District Rule 1081 and 40 CFR 60.335(b)(10)] Federally Enforceable Through Title V Permit
26. When the unit is not fired solely on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the turbine exceeds 0.8% by weight. [40 CFR 60.334(j)] Federally Enforceable Through Title V Permit
27. The owner or operator shall install, certify, maintain, operate and quality-assure a Predictive Emission Monitoring System (PEMS) which continuously monitors and records the exhaust gas NO_x, CO and O₂ concentrations. Predictive emissions monitor(s) shall be capable of monitoring emissions during normal operating conditions, and during startups and shutdowns provided the PEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of PEMS cannot be demonstrated during startup conditions, PEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this permit. [District Rules 1080, 2201, and 4703 and 40 CFR 60.334(b)]
28. Operation and calibration of the PEMS equipment shall be performed in accordance with the requirements of 40 CFR, Part 60, Appendix B, Performance Specification 16. [District Rule 1080]
29. The PEMS sensor evaluation system shall check the integrity of each input at least once per day. [District Rule 1080]

CONDITIONS CONTINUE ON NEXT PAGE

30. The owner/operator shall perform a relative accuracy test audit (RATA) for the NO_x, CO and O₂ PEMS within 60 days of initial startup and at least once every four calendar quarters thereafter. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the predictive emission monitoring equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix B, Performance Specification 16. [District Rule 1080]
31. The owner/operator shall perform a relative accuracy audit (RAA) of the PEMS at least once each calendar quarter, except during quarters in which a RATA is performed, in accordance with EPA guidelines. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]
32. If a PEMS passes all quarterly RAAs in the first year and also passes the subsequent yearly RATA in the second year, the permittee may elect to perform a single mid-year RAA in the second year in place of the quarterly RAAs as specified in Section 9.3 of EPA Performance Specification 16. This option may be repeated, but only until the PEMS fails either a mid-year RAA or a yearly RATA. When such a failure occurs, the operator must resume quarterly RAAs in the quarter following the failure and continue conducting quarterly RAAs until the PEMS successfully passes both a year of quarterly RAAs and a subsequent RATA. [District Rule 1080]
33. Results of continuous emissions monitoring equipment shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]
34. The facility shall maintain equipment, facilities, and systems compatible with the District's continuous emission monitor data polling software system and shall make PEMS data available to the District's automated polling system on a daily basis. [District Rule 1080]
35. Upon notice by the District that the facility's PEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the PEMS data is sent to the District by a District-approved alternative method. [District Rule 1080]
36. The owner or operator shall submit a written report of PEMS operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and the cause of excess (if known), corrective actions taken and preventative measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period and used to determine compliance with an emissions standard; Applicable time and date of each period during which the PEMS was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080]
37. When the turbine is operating and it is determined that the predictive emission monitoring system (PEMS) for NO_x and CO is not operating properly, the permittee shall notify the District of the breakdown condition in accordance with Rule 1100 (Equipment Breakdown). During the breakdown period, the facility shall demonstrate emissions compliance by monitoring and recording hourly NO_x and CO concentrations utilizing a portable analyzer that meets District specifications. The facility shall operate the portable analyzer providing data to the District for a maximum of 96 hours per breakdown occurrence. [District Rules 2201 and 4703]
38. Portable analyzer readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. If the NO_x and/or CO concentrations, as measured by the permittee with a portable analyzer, exceed the permitted emission limits, the permittee shall notify the District and return the NO_x and CO concentrations to the permitted emission limits as soon as possible but no longer than eight (8) hours after detection. If the permittee's portable analyzer readings continue to exceed the permitted emissions limits after eight (8) hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
40. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
41. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any PEM system that has been installed pursuant to District Rule 1080, and emission measurements. [District Rules 1080 and 4703 and 40 CFR 60.8(d)] Federally Enforceable Through Title V Permit
42. Records shall be maintained on the quality and accuracy of all instruments to verify compliance. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
43. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

ATTACHMENT C

Application

San Joaquin Valley Air Pollution Control District

www.valleyair.org


RECEIVED

JAN 17 2014

Permit Application For:

Permits Services
SJVAPCD

☐ ADMINISTRATIVE AMENDMENT ☒ MINOR MODIFICATION ☐ SIGNIFICANT MODIFICATION

1. PERMIT TO BE ISSUED TO: Fresno-Clovis Regional Wastewater Reclamation Facility	
2. MAILING ADDRESS:	
STREET/P.O. BOX: 5607 W. Jensen Ave.	
CITY: Fresno	STATE: CA
9-DIGIT: 93706-	ZIP CODE: 9458
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:	
STREET: Same	CITY: Same
NW SECTION Fresno TOWNSHIP South RANGE 19 East	
INSTALLATION DATE: 12.17.14	
4. GENERAL NATURE OF BUSINESS: Wastewater Treatment	
5. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary)	
<p>This application is to incorporate ATC -C-535-18-12 and ATC -C-535-19-12 (attached) to the PEMS system that is replacing the CEMS system.</p>	
6. TYPE OR PRINT NAME OF APPLICANT: Ray Arthur	TITLE OF APPLICANT: Project Manager - Air Resources
7. SIGNATURE OF APPLICANT: 	DATE: 1.20.14
	PHONE: 559.621.5266
	FAX: 559.498.1700
	EMAIL: ray.arthur@fresno.gov

For APCD Use Only:

DATE STAMP	FILING FEE RECEIVED: \$	CHECK#:
	DATE PAID:	
	PROJECT NO: C-1140130	FACILITY ID: C-535

**San Joaquin Valley
Unified Air Pollution Control District**

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

☐ SIGNIFICANT PERMIT MODIFICATION
☒ MINOR PERMIT MODIFICATION

☐ ADMINISTRATIVE
AMENDMENT

COMPANY NAME: Fresno-Clovis Regional Wastewater Reclamation Facility	FACILITY ID: C - 535
1. Type of Organization: <input type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input checked="" type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: City of Fresno	
3. Agent to the Owner: Same	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- ☒ Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- ☒ Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Ray Arthur
Signature of Responsible Official

1.20.14
Date

Ray Arthur
Name of Responsible Official (please print)

Project Manager - Air Resources
Title of Responsible Official (please print)

ATTACHMENT D

Previous Title V Operating Permits
C-535-18-11 and '-19-11

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-535-18-11

EXPIRATION DATE: 01/31/2016

EQUIPMENT DESCRIPTION:

3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #1 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-19

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. The gas-fired turbines shall be fired on natural gas or digester gas or any combination (blend) of natural gas and digester gas. [District Rule 2201]
4. The total sulfur content of the natural gas combusted by this unit shall not exceed 1.0 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The H₂S content of the digester gas combusted by this unit shall not exceed 200 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The owner or operator shall install, operate and maintain in calibration a system which continuously measures and records: the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
7. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NO_x, CO, and O₂. The CEMs shall meet the requirements of 40 CFR part 60, Appendices B and F and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201, and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
8. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
9. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
10. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO_x, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB policy document titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

11. During periods of start-up or shutdown, turbine exhaust emission rates shall not exceed any of the following limits: NOx (as NO₂) - 5.74 lb/hr, SOx - 2.07 lb/hr, PM₁₀ 1.34 lb/hr, CO - 27.95 lb/hr, or VOC - 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emission rates from this unit, except during start-up and shutdown, shall not exceed any of the following limits: NOx (as NO₂) - 0.95 lb/hr and 5 ppmvd @ 15% O₂; SOx (as SO₂) - 2.07 lb/hr; PM₁₀ - 1.34 lb/hr; CO - 27.95 lb/hr and 188.0 ppmvd @ 15% O₂; or VOC (as methane) - 0.02 lb/hr. [District Rules 2201 and 4703, 40 CFR 60.332(a)(2) and 40 CFR 60.333(a) & (b)] Federally Enforceable Through Title V Permit
13. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NOx (as NO₂) - 51.5 lb/day; SOx (as SO₂) - 49.7 lb/day; PM₁₀ - 32.2 lb/day; CO - 670.8 lb/day; or VOC - 0.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NOx (as NO₂) - 9,299 lb/year; SOx (as SO₂) - 18,141 lb/year; PM₁₀ - 11,753 lb/year; CO - 244,842 lb/year; or VOC - 183 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Ammonia (NH₃) emissions shall not exceed either of the following limits: 1.37 lb/hr or 10 ppmvd @ 15% O₂ (based on a 24 hour rolling average). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1.) calculate the daily ammonia emissions using the following equation: $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$, where a = average ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O₂ across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O₂. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation; 4.) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the permittee shall monitor and record the stack concentration weekly using a portable emissions monitor that meets District specifications. If compliance with the ammonia emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The duration of each startup or shutdown event shall not exceed two hours. Start-up and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
18. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703] Federally Enforceable Through Title V Permit
19. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit
20. Source testing to measure the NOx, CO, and NH₃ emission rates (lb/hr and ppmvd @ 15% O₂) shall be conducted at least once every twelve months. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. When the continuous emission monitoring system (CEMS) for NO_x and CO is not operating properly, the permittee shall notify the District of the breakdown condition in accordance with Rule 1100 (Equipment Breakdown). During the breakdown period, the facility shall demonstrate emissions compliance by monitoring and recording hourly NO_x and CO concentrations utilizing a portable analyzer that meets District specifications. The facility shall operate the portable analyzer providing data to the District for a maximum of 96 hours per breakdown occurrence. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
24. Portable analyzer readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
25. If the NO_x and/or CO concentrations, as measured by the permittee with a portable analyzer, exceed the permitted emission limits, the permittee shall notify the District and return the NO_x and CO concentrations to the permitted emission limits as soon as possible but no longer than eight (8) hours after detection. If the permittee's portable analyzer readings continue to exceed the permitted emissions limits after eight (8) hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
26. The following test methods shall be used: NO_x - EPA Method 7E or 20 or ARB Method 100, CO - EPA Method 10 or 10B or ARB Method 100, O₂ - EPA Method 3, 3A, or 20 or ARB Method 100, and ammonia - BAAQMD Method ST-1B. NO_x test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit
27. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703] Federally Enforceable Through Title V Permit
28. When the unit is fired solely on PUC-regulated natural gas, maintain on file copies of the natural gas bills. [District Rule 2520 and 40 CFR 60.334(h)(3)] Federally Enforceable Through Title V Permit
29. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel shall be tested weekly except that if compliance with the fuel sulfur content limit in this permit has been demonstrated for 8 consecutive weeks, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content limit in this permit, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520 and 40 CFR 60.334(i)(3)] Federally Enforceable Through Title V Permit
30. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel being fired in the turbine shall be determined using ASTM method D-1072, D-4084, D-3246 or D-4810. [District Rule 1081 and 40 CFR 60.335(b)(10)] Federally Enforceable Through Title V Permit
31. When the unit is not fired solely on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the turbine exceeds 0.8% by weight. [40 CFR 60.334(j)] Federally Enforceable Through Title V Permit
32. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

33. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), and emission measurements. [40 CFR 60.8(d) and District Rule 1080] Federally Enforceable Through Title V Permit
34. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
35. Records shall be maintained on the quality and accuracy of all instruments to verify compliance. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
36. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
37. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
38. For the NO_x, CO, and O₂ CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080] Federally Enforceable Through Title V Permit
40. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit

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San Joaquin Valley Air Pollution Control District

PERMIT UNIT: C-535-19-11

EXPIRATION DATE: 01/31/2016

EQUIPMENT DESCRIPTION:

3.377 MW ALLISON MODEL 501 KB-5 DIGESTER/NATURAL GAS-FIRED TURBINE GENERATOR #2 WITH WATER INJECTION AND SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION, HEAT RECOVERY STEAM GENERATOR, AND A 2.25 MW STEAM TURBINE SHARED WITH C-535-18

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
3. The gas-fired turbines shall be fired on natural gas or digester gas or any combination (blend) of natural gas and digester gas. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The total sulfur content of the natural gas combusted by this unit shall not exceed 1.0 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The H₂S content of the digester gas combusted by this unit shall not exceed 200 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The owner or operator shall install, operate and maintain in calibration a system which continuously measures and records: the fuel consumption and the ratio of water to fuel being fired in the turbine. [40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
7. The exhaust stack shall be equipped with a continuous emissions monitor (CEM) for NO_x, CO, and O₂. The CEMs shall meet the requirements of 40 CFR part 60, Appendices B and F and shall be capable of monitoring emissions during startups and shutdowns as well as during normal operating conditions. [District Rules 1080, 2201, and 4703 and 40 CFR 60.334(b)] Federally Enforceable Through Title V Permit
8. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] Federally Enforceable Through Title V Permit
9. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] Federally Enforceable Through Title V Permit
10. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NO_x, CO, and O₂ analyzer during District inspections. The sampling ports shall be located in accordance with the CARB policy document titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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11. During periods of start-up or shutdown, turbine exhaust emission rates shall not exceed any of the following limits: NOx (as NO₂) - 5.74 lb/hr, SOx - 2.07 lb/hr, PM₁₀ 1.34 lb/hr, CO - 27.95 lb/hr, or VOC - 0.02 lb/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emission rates from this unit, except during start-up and shutdown, shall not exceed any of the following limits: NOx (as NO₂) - 0.95 lb/hr and 5 ppmvd @ 15% O₂; SOx (as SO₂) - 2.07 lb/hr; PM₁₀ - 1.34 lb/hr; CO - 27.95 lb/hr and 188.0 ppmvd @ 15% O₂; or VOC (as methane) - 0.02 lb/hr. [District Rules 2201 and 4703, 40 CFR 60.332(a)(2) and 40 CFR 60.333(a) & (b)] Federally Enforceable Through Title V Permit
13. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NOx (as NO₂) - 51.5 lb/day; SOx (as SO₂) - 49.7 lb/day; PM₁₀ - 32.2 lb/day; CO - 670.8 lb/day; or VOC - 0.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emissions from this unit (including emissions during start-up and shutdown), shall not exceed any of the following limits: NOx (as NO₂) - 9,299 lb/year; SOx (as SO₂) - 18,141 lb/year; PM₁₀ - 11,753 lb/year; CO - 244,842 lb/year; or VOC - 183 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Ammonia (NH₃) emissions shall not exceed either of the following limits: 1.37 lb/hr or 10 ppmvd @ 15% O₂ (based on a 24 hour rolling average). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1.) calculate the daily ammonia emissions using the following equation: $(\text{ppmvd @ 15\% O}_2) = ((a - (b \times c / 1,000,000)) \times (1,000,000 / b)) \times d$, where a = average ammonia injection rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O₂ across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O₂. If this option is chosen, the permittee shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the permittee may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the permittee shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation; 4.) The permittee may utilize draeger tubes to measure the ammonia in the exhaust stack. If this option is chosen, the permittee shall monitor and record the stack concentration weekly using a portable emissions monitor that meets District specifications. If compliance with the ammonia emissions is demonstrated for eight consecutive weeks, then the monitoring frequency will be reduced to monthly. If deviations are observed in two consecutive months, monitoring shall revert to weekly until eight consecutive weeks show no deviations. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the week if on a weekly monitoring schedule. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The duration of each startup or shutdown event shall not exceed two hours. Start-up and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
18. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703] Federally Enforceable Through Title V Permit
19. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4703] Federally Enforceable Through Title V Permit
20. Source testing to measure the NOx, CO, and NH₃ emission rates (lb/hr and ppmvd @ 15% O₂) shall be conducted within 60 days of startup and at least once every twelve months thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. When the continuous emission monitoring system (CEMS) for NO_x and CO is not operating properly, the permittee shall notify the District of the breakdown condition in accordance with Rule 1100 (Equipment Breakdown). During the breakdown period, the facility shall demonstrate emissions compliance by monitoring and recording hourly NO_x and CO concentrations utilizing a portable analyzer that meets District specifications. The facility shall operate the portable analyzer providing data to the District for a maximum of 96 hours per breakdown occurrence. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
24. Portable analyzer readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
25. If the NO_x and/or CO concentrations, as measured by the permittee with a portable analyzer, exceed the permitted emission limits, the permittee shall notify the District and return the NO_x and CO concentrations to the permitted emission limits as soon as possible but no longer than eight (8) hours after detection. If the permittee's portable analyzer readings continue to exceed the permitted emissions limits after eight (8) hours, the permittee shall notify the District within the following one (1) hour, and conduct a certified source test within 60 days to demonstrate compliance with the permitted emissions limits. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
26. The following test methods shall be used: NO_x - EPA Method 7E or 20 or ARB Method 100, CO - EPA Method 10 or 10B or ARB Method 100, O₂ - EPA Method 3, 3A, or 20 or ARB Method 100, and ammonia - BAAQMD Method ST-1B. NO_x test results shall be corrected to ISO standard conditions as defined in 40 CFR Part 60 Subpart GG Section 60.335. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081 and 4703 and 40 CFR 60.335] Federally Enforceable Through Title V Permit
27. HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [District Rule 4703] Federally Enforceable Through Title V Permit
28. When the unit is fired solely on PUC-regulated natural gas, maintain on file copies of the natural gas bills. [District Rule 2520 and 40 CFR 60.334(h)(3)] Federally Enforceable Through Title V Permit
29. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel shall be tested weekly except that if compliance with the fuel sulfur content limit in this permit has been demonstrated for 8 consecutive weeks, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content limit in this permit, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2520 and 40 CFR 60.334(i)(3)] Federally Enforceable Through Title V Permit
30. When the unit is not fired solely on PUC-regulated natural gas, the sulfur content of the fuel being fired in the turbine shall be determined using ASTM method D-1072, D-4084, D-3246 or D-4810. [District Rule 1081 and 40 CFR 60.335(b)(10)] Federally Enforceable Through Title V Permit
31. When the unit is not fired solely on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the turbine exceeds 0.8% by weight. [40 CFR 60.334(j)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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32. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
33. The owner or operator shall maintain records that contain the following: the occurrence and duration of any start-up, shutdown or malfunction, performance testing, evaluations, calibrations, checks, adjustments, any periods during which a continuous monitoring system or monitoring device is inoperative, maintenance of any CEM system that has been installed pursuant to District Rule 1080 (as amended 12/17/92), and emission measurements. [40 CFR 60.8(d) and District Rule 1080] Federally Enforceable Through Title V Permit
34. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
35. Records shall be maintained on the quality and accuracy of all instruments to verify compliance. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
36. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
37. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
38. For the NO_x, CO, and O₂ CEMs, the owner/operator shall perform a relative accuracy test audit (RATA) as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary of data shall be in the form and the manner prescribed by the APCO. [District Rule 1080] Federally Enforceable Through Title V Permit
40. Operators of CEM systems installed at the direction of the APCO shall submit a written report for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080] Federally Enforceable Through Title V Permit

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